

Amendments to the Claims

Claim 1 (previously amended). 1. A duplexing communication signal filter for connection to an antenna, a transmitter and a receiver, the signal filter suitable for filtering an incoming signal from the antenna to the receiver and for filtering an outgoing signal from the transmitter to the antenna, the filter comprising:

a substantially U-shaped core of dielectric material including a transmit arm, a receive arm and a base portion joining the transmit arm to the receive arm, each arm having an inwardly facing surface and an outwardly facing surface and each arm defining a series of through-holes, each through-hole extending through the arm between an opening at the inwardly facing surface and an opening at the outwardly facing surface; and

a pattern of metallized and unmetallized areas on the core including,

a wide area of metallization,

a first unmetallized area surrounding a plurality of the through-hole openings on the outwardly facing surface of the transmit arm,

a second unmetallized area surrounding a plurality of the through-hole openings on the outwardly facing surface of the receive arm,

a transmitter pad metallized area on the transmit arm for receiving the outgoing signal,

a receiver pad metallized area on the receive arm for providing the incoming signal,

an antenna pad metallized area on the base portion for receiving the incoming signal and outputting the outgoing signal, and

a bridge metallized area extending between the transmit arm and the receive arm.

Claim 2 (original). The filter according to claim 1 wherein the core further defines a bridge through-hole extending between the transmit arm outwardly facing surface and the receive arm outwardly facing surface, the bridge through-hole having side walls and the bridge metallized area being present on the side walls of the bridge through-hole.

Claim 3 (withdrawn).

Claim 4 (withdrawn).

Claim 5 (original). The filter according to claim 1 exhibiting a filtering passband for the outgoing signal from about 1850 MHz to about 1910 MHz and exhibiting filtering passband for the incoming signal from about 1930 MHz to about 1990 MHz.

Claim 6 (original). The filter according to claim 5 with a length of at most about 17 millimeters.

Claim 7 (canceled).

Claim 8 (original). The filter according to claim 5 with a surface mount height of at most about 4 millimeters.

Claim 9 (original). The filter according to claim 1 exhibiting a filtering passband for the outgoing signal of about 1850 MHz to about 1910 MHz with an ambient temperature maximum insertion loss over the outgoing signal passband of at most about 2.51 decibels (dB).

Claim 10 (presently amended). The filter according to claim 1 exhibiting a filtering passband for the incoming signal from about 1930 MHz to about 1990 MHz ~~with an ambient temperature maximum insertion loss over the incoming signal passband of at most about 4.34 decibels (dB)~~.

Claim 11 (original). The filter according to claim 1 having a length of at most about 17 millimeters.

Claim 12 (presently amended). The filter according to claim 1 wherein the antenna pad is positioned on the base portion towards the transmit arm.

Claim 13 (presently amended). The filter according to claim 1 wherein the antenna pad is positioned on the base portion towards the receive arm.

Claim 14 (original). The filter according to claim 1 wherein the transmitter pad is spaced apart from the base portion along a length of the transmit arm.

Claim 15 (original). The filter according to claim 1 wherein the receiver pad is spaced apart from the antenna pad along a length of the receive arm.

Claim 16 (original). The filter according to claim 1 wherein the transmit arm has a base side and an opposing distal end and the transmitter pad is positioned such that at least one of the through-holes is present between the transmitter pad and the distal end.

Claim 17 (original). The filter according to claim 1 wherein the transmit arm includes at least one through-hole configured to be a signal trapping resonator.

Claim 18 (original). The filter according to claim 1 wherein the receive arm includes at least one through-hole configured to be a signal trapping resonator.

Claim 19 (original). The filter according to claim 1 wherein the transmit arm outwardly facing surface has a metallization pattern as shown in FIG. 2.

Claim 20 (previously amended). The filter according to claim 1 wherein the receive arm outwardly facing surface has a metallization pattern as shown in FIG. 3.

Claim 21 (previously amended). The filter according to claim 1 wherein the series of through-holes defined by the transmit arm are each axially aligned with the series of through-holes defined by the receive arm.

Claims 22-27 (canceled).

Claim 28 (original). A duplexing communication signal filter for connection to an antenna, a transmitter and a receiver, the signal filter for filtering an incoming signal from the antenna to the receiver and for filtering an outgoing signal from the transmitter to the antenna, the filter comprising:

a substantially U-shaped core of dielectric material including a first arm, a second arm and a base portion joining the first arm to the second arm, each arm having an inwardly facing surface and an outwardly facing surface and each arm defining a series of through-holes, each through-hole extending through the arm between an opening on the inwardly facing surface and an opening on the outwardly facing surface; and

a pattern of metallized and unmetallized areas on the core including,
a wide area of metallization for providing off-band signal absorption,
a first unmetallized area surrounding at least one of the through-hole openings on the outwardly facing surface of the transmit arm,

a second unmetallized area surrounding at least one of the through-hole openings on the outwardly facing surface of the receiver arm,

a transmitter pad metallized area on the first arm for receiving the outgoing signal,

a receiver pad metallized area on the second arm for providing the incoming signal,

an antenna pad metallized area on the base portion for receiving the incoming signal and outputting the outgoing signal, and

a bridge metallized area extending between the first arm outwardly facing surface and the second arm outwardly facing surface.

Claim 29 (original). The filter according to claim 27 exhibiting a filtering passband for the outgoing signal from about 1850 MHz to about 1910 MHz and exhibiting filtering passband for the incoming signal from about 1930 MHz to about 1990 MHz.

Claim 30 (presently amended). The filter according to claim 27 with a ~~maximum linear-dimension length~~ of at most 17 millimeters.

Claim 31 (presently amended). The filter according to claim 27 with a ~~thickness surface mount height~~ of at most about 4 millimeters.

Claim 32 (previously amended). A duplexing communication signal filter adapted for connection to an antenna, a transmitter and a receiver for filtering an incoming signal from the antenna to the receiver and for filtering an outgoing signal from the transmitter to the antenna, the filter comprising:

a substantially U-shaped core of dielectric material including a first arm, a second arm and a base portion joining the first arm to the second arm, each arm defining a series of through-holes extending through the arm; and

a surface pattern of metallized and unmetallized areas on the core including,
a wide area of metallization,

a first unmetallized area surrounding at least one of the through-holes of the transmit arm,

a second unmetallized area surrounding at least one of the through-holes,
a transmitter pad metallized area on the first arm for receiving the outgoing signal,

a receiver pad metallized area on the second arm for providing the incoming signal,

an antenna pad metallized area on the base portion for receiving the incoming signal and outputting the outgoing signal, and

a bridge metallized area extending between the first arm and the second arm being capacitively coupled to the antenna pad.

Claim 33 (canceled).